

Socio-economic aspects of parasite control in livestock

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Keywords: livestock, helminths, economics, communication

Essentially all herds/flocks in a grass-based production system are affected by helminth infections. Helminth infections of livestock affect productivity in all age classes, and are amongst the most important production-limiting diseases of grazing ruminants.

Over the last decade, there has been a shift in focus in the diagnosis of these infections from merely detecting presence/absence of infection towards detecting the impact of infection on production. This has been facilitated by different epidemiological studies observing consistent negative correlations between helminth diagnostic test results and measures of productivity. These established relationships can be used to indicate helminth-induced production losses associated with a test result of a specific farm. However, the economic impact of helminth infections and helminth control measures also depends on multiple other factors, such as farm-specific input and output prices and local regulations. Animal health decisions have a significant impact on production efficiency, but are also subject to resource scarcity and budget constraints. Hence, economic evaluation frameworks are needed that can be integrated in decision making. Such economic models of animal diseases are important because they contribute to balance expenditures on disease control with the actual disease costs and to evaluate the economic attractiveness of animal health interventions compared to other investment opportunities.

Moreover, it is now well understood that farmer's decisions about their enterprises are not solely based on financial and business criteria. Farmer's motives are rooted in deeply held values and are influenced by attitudes, beliefs and social norms. Understanding all the values that drive farmer behaviour requires socio-psychological research, aimed to lead to increased understanding of a farmer's rationality and more effective advisory interventions. Behavioural frameworks can be constructed, based on theories in the fields of behavioural and health psychology and validated with data from quantitative (surveys) and qualitative (focus group meetings, in-depth interviews)

socio-psychological research, in order to identify factors with significant influence on farmers' behaviour intention. Identified barriers and benefits for sustainable worm control can then be tested using interventional communication experiments. In addition to these cognitive factors, intuition is also an important driver of human behaviour. Intuitive, unconscious farmer behaviour can be influenced by discrete stimuli (nudges). Together with factors from the cognitive behavioural frameworks mentioned above, these nudges can be used to steer farmers behaviour towards more sustainable parasite control.

In this presentation, we will review recent insights in the farm-specific economic impact of helminth infections on (dairy) cattle farms as well as in farmer attitudes and behaviour regarding helminth control in dairy and sheep farms. Combining better economic assessments of helminth infections on a farm together with a deeper understanding of the non-economic factors that drive a farmer's animal health decisions should result in more effective control strategies, a higher farmer's compliance and increased farmer satisfaction.